UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

KONINKLIJKE PHILIPS ELECTRONICS NV, et al.,

Plaintiffs,

v.

DEFIBTECH LLC, et al.,

Defendants.

CASE NO. C03-1322JLR

ORDER

I. INTRODUCTION

This matter comes before the court on the parties' request for construction of the claim terms at issue in this patent infringement action. At the court's direction, the parties jointly chose a set of ten claim terms to comprise the "first round" of terms for the court to construe. The court has reviewed the parties' briefing and supporting materials, and has heard oral argument from the parties at an October 11, 2005 Markman hearing. This order memorializes the court's claim construction for these first ten terms.

II. BACKGROUND

Plaintiff Koninklijke Philips Electronics NV ("Philips") and Defendant Defibtech LLC ("Defibtech") manufacture portable defibrillators. The devices at issue are automatic external defibrillators that people without medical training can use in

emergencies. Because their users are presumptively untrained, the defibrillators must be "smart" enough to deliver appropriate shocks to patients with a wide range of body characteristics without input from the user. Moreover, because portable defibrillators are rarely used, they must be able to remain functional through long periods of inactivity, and to signal any malfunctions to users. Heartstream, Inc. ("Heartstream") began developing defibrillators with these characteristics in the early 1990s. Heartstream is now a wholly-owned division of Philips.

Philips (or Heartstream) has been selling various portable defibrillators since 1996, and has obtained at least thirteen patents covering its technology. The court has stayed consideration of four of those patents. The nine remaining patents cover "shock delivery" and "self-test" technology. The three self-test patents govern tests that a defibrillator performs on itself to ensure proper operation. Those patents are United States Patent Nos. 5,800,460 (the "'460 Patent"), 5,879,374 (the "'374 Patent"), and 6,016,059 (the "'059 Patent"). The six shock delivery patents address technology that adjusts the waveform of a defibrillator's shock based on results from an electrical test that the defibrillator performs on the patient. The electrical test measures variances in patient impedance that arise from differences in weight, body fat, and other factors. The shock delivery patents are United States Patent Nos. 5,601,612 (the "'612 Patent"), 5,607,454 (the "'454 Patent"), 5,735,879 (the "'879 Patent"), 5,749,905 (the "'905 Patent"), 5,803,927 (the "'927 Patent"), and 6,047,212 (the "'212 Patent"). Philips contends that Defibtech infringes each of the self-test and shock delivery patents.

Defibtech entered the automatic external defibrillator market in 2002. It admits to studying Heartstream defibrillators and other products when designing its defibrillators, but denies that it infringes any Philips patent.

In the first step toward deciding Philips' infringement allegations, the court must now construe the meaning of the terms of the asserted patents.

III. ANALYSIS

Almost ten years ago, the Supreme Court in Markman v. Westview Instruments, Inc. placed sole responsibility for construing patent claims on the court. 517 U.S. 370, 372 (1996). Subsequent authority established that the court construes claims purely as a matter of law. Cybor Corp. v. FAS Tech., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (applying de novo review to all claim construction issues, even "allegedly fact-based questions"). Executing the Markman mandate requires a court to rank the importance of various sources of evidence of claim term meaning and consider it accordingly.

Intrinsic evidence, which includes the patent and its prosecution history, is the primary source from which to derive a claim's meaning. Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc). A patent is composed of three parts: (1) a "written description," an often lengthy exposition of the background of the invention, at least one embodiment of the invention, and other written material that assists in understanding how to practice the invention; (2) (in most cases) a set of drawings that illustrates portions of the written description; and (3) the claims, which delimit the scope of the invention. General Foods Corp. v. Studiengesellschaft Kohle mbH, 972 F.2d 1272, 1274 (Fed. Cir. 1992). Together, these three components make up the patent's "specification."[1] Atmel Corp. v. Information Storage Devices, Inc., 198 F.3d 1374, 1384 (Fed. Cir. 1999); 35 U.S.C. § 112. The prosecution history exists independently of the

[1]Although 35 U.S.C. § 112 includes the claims as part of a patent's specification, many courts and practitioners use the term "specification" to refer to all portions of a patent except the claims. In most cases, the context of the discussion reveals what portion of the specification is at issue.

patent. It consists of the inventor's application to the United States Patent and Trademark Office ("PTO") and all correspondence between the PTO and the inventor documenting the invention's progress from patent application to issued patent. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

In its review of intrinsic evidence, the court should begin with the language of both the asserted claim and other claims in the patent. Phillips, 415 F.3d at 1314; Biagro Western Sales, Inc. v. Grow More, Inc., 423 F.3d 1296, 1302 (Fed. Cir. 2005) ("It is elementary that claim construction begins with, and remains focused on, the language of the claims."). The court's task is to determine the "ordinary and customary meaning" of the terms of a claim through the eyes of a person of ordinary skill in the art on the filing date of the patent. Phillips, 415 F.3d at 1313 (quoting Vitronics, 90 F.3d at 1582).

The court must read claim language, however, in light of the remainder of the specification. Id. at 1316 ("[T]he specification necessarily informs the proper construction of the claims."). The specification acts as a "concordance" for claim terms, and is thus the best source beyond claim language for understanding claim terms. Id. at 1315. The inventor is free to use the specification to define claim terms as she wishes, and the court must defer to an inventor's definition, even if it is merely implicit in the specification. Id. at 1316 ("[T]he inventor's lexicography governs."), 1320-21 (noting that a court cannot ignore implicit definitions). The court should "rely heavily" on the specification in interpreting claim terms. Id. at 1317. In doing so, however, it must walk a tightrope between properly construing the claims in light of the written description and the "cardinal sin" of improperly importing limitations from the written description into the claims. Sci Med Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d

1337, 1340 (Fed. Cir. 2001); Phillips, 415 F.3d at 1323 (citing Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed. Cir. 1998)).

Although a patent's prosecution history is also intrinsic evidence, it is "less useful for claim construction purposes," because it usually "lacks the clarity of the specification." Id. at 1317. The prosecution history is useful, however, in determining when an inventor has disavowed certain interpretations of his or her claim language. Id.

Finally, the court can consider extrinsic evidence, "including expert and inventor testimony, dictionaries, and learned treatises." Id. (citing Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed. Cir. 1995)). Extrinsic evidence is usually "less reliable than the patent and its prosecution history" as a source for claim interpretation. Id. at 1318. The court thus need not admit extrinsic evidence, but may do so in its discretion if intrinsic evidence does not disclose the meaning of a claim term. Id. at 1319; Vitronics, 90 F.3d at 1583 ("[W]here the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper.").

In this case, court declines to rely on the sole extrinsic evidence the parties have put before it: dictionary definitions of the claim terms. For each disputed claim term, the court has begun with a view of its ordinary meaning formed from the undisputed portions of the parties' proposed claim constructions. The court has then looked to the intrinsic evidence to elucidate that meaning. In each of these claim terms, the intrinsic evidence is sufficient to either confirm that the inventors used the term in its ordinary sense or to reveal the precise departure from ordinary meaning that the inventors had in mind. The court thus declines to discuss the dictionary definitions of these claim terms, consistent with the Phillips court's recognition that it is not necessary to do so. 415 F.3d at 1318-1319.

With this general framework in mind, the court turns to the ten claims-in-suit. Seven terms are from the self-test patents. Three are from the shock delivery patents.

A. Construing Terms in the Shock Delivery Patents

The six shock delivery patents share a common genealogy. All six originated in the same abandoned patent application (Ser. No. 101,837). Four of them (the '612 Patent, the '879 Patent, the '905 Patent, and the '212 Patent) are continuation applications or divisional applications from that application. This four-patent subgroup shares a common written description. The other subgroup contains the two remaining patents, which issued from a continuation-in-part of the original application. This subgroup shares a written description that expressly incorporates the written description of the other four shock delivery patents. When the court cites the written descriptions of these patents, it will generally cite only a single patent from each subgroup.

1. "Adjusting" means "modifying."

The term "adjusting" appears in eight of the claims-in-suit, and in each, the surrounding language strongly supports Defibtech's argument that the term simply means "modifying." Philips proposes that the term means "correcting or modifying to reflect actual [patient] conditions." Inserting Philips' definition into the claims-in-suit demonstrates the flaws in its construction. For example, Claim 1 of the '612 patent covers a method that includes monitoring a "patient-dependent electrical parameter" and "adjusting a discharge parameter of a later phase of the multiphasic waveform as a function of a value of the electrical parameter during an earlier phase." The claim language itself dictates precisely what type of "adjusting" the claim contemplates. Philips' construction is surplusage, as the claim language dictates waveform adjustment according to a patient-dependant electrical parameter. Philips' less specific "modifying

to reflect actual [patient] conditions" language would read out or needlessly broaden the specific language of the claim.

The same contextual analysis applies to the remaining claims that use "adjusting." Every "adjusting" claim contains specific language that informs the reader what type of adjusting falls within the invention. Claim 15 of the '454 Patent discloses "adjusting the title of the waveform based on the value of the monitored electrical parameter," and Claim 53 covers "adjusting a waveform parameter based on a value of the monitored parameter." Claims 1 and 13 of the '879 Patent address "adjusting a discharge parameter based on the measured patient impedance" and "adjusting waveform tilt based on a value of the monitored electrical parameter." The remaining claims are similar in that they unambiguously disclose the parameter that will dictate the necessary "adjusting." Philips' proposed construction is inappropriate in light of this unvarying pattern of using the term "adjusting" followed by specific instructions. The parties agree that "adjusting" means "modifying," but Philips insists that the term has qualifying language built into it. This proposal conflicts with the claim language, which contains its own qualifiers in every instance.

The court finds nothing within the remainder of the patents' specifications that is inconsistent with the meaning that the claim language dictates. Philips insists that a primary feature of the inventions claimed in the shock delivery patents is adjusting the shock waveform to reflect differing electrical parameters within patients. A review of the written descriptions supports Philips' assertion, e.g., '879 Patent at 2:2-7; '454 Patent at 3:38-41, but the assertion is irrelevant. The language surrounding the term "adjusting" in each claim serves the purpose of delimiting how the defibrillator adjusts the waveform in response to those parameters. This is a case in which the patentee has

not merely acted as his own lexicographer, but has done so in the language of the claims. The court must defer to that lexicography, Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1344 (Fed. Cir. 1998), under which "adjusting" means no more than "modifying."

2. "Monitoring" means "measuring."

The court's resolution of the small difference between the parties' interpretations of "monitoring" presents a complicated question. The parties agree that "monitoring" means "measuring."[2] Defibtech, however, contends that its proposed definition, "taking more than one measurement over time," properly reflects the patents' disclosure of a monitoring step that takes place over time. Philips argues that even a single measurement qualifies as "monitoring."

Defibtech's argument finds some support in the claim language. Each time the patents use "monitoring," the accompanying language suggests that monitoring takes place over an interval of time. Claim 1 of the '612 Patent refers to "monitoring a patient-dependent electrical parameter during the discharging step," and several other claims use substantially identical language. '879 Patent Claim 13; '454 Patent Claims 1, 15, 53; '905 Patent Claims 1, 4, 9; '927 Patent Claims 1, 9, 11. Claim 16 of the '454 Patent discloses "an electrical parameter monitored during the discharge step." The language of the claims leaves no doubt that the "steps" they refer to are not single points in time, but rather intervals of time. The most compelling evidence for this proposition is that "monitoring" inevitably takes place "during" a step, suggesting that a step takes place over a period of time, whereas "monitoring" that took place "at" a step would

[2]Philips asserts that "monitoring" means "checking or measuring," but never explains what the term "checking" adds to its definition. The court finds "checking" to be redundant of "measuring."

suggest a step that is a single point in time. Moreover, the claimed steps "begin" and "end" according to the language of the claims. E.g., '454 Patent Claims 53, 54. This suggests that monitoring cannot be an instantaneous event, because intervals begin and end, whereas instants do not.

Moreover, as Defibtech noted during oral argument, Philips used the term "measuring" in other portions of the shock delivery specifications, including other claims. For example, Claim 13 of the '879 Patent covers "monitoring a patient-dependent electrical parameter during the discharging step," whereas Claim 1 discloses "measuring a patient impedance during the discharge step." Defibtech argues that if "monitoring" and "measuring" had the same meaning, Philips would have used the same term consistently in the patents.

The court finds the claim language insufficient to carry Defibtech's argument. Although the use of "monitoring" in one claim and "measuring" in another raises an inference that the terms have different meaning, that inference is not determinative. Desper Prods., Inc. v. Qsound Labs, Inc., 157 F.3d 1325, 1337 n.3 (Fed. Cir. 1998). In addition, comparing the "measuring" and "monitoring" claims reveals that both take place "during the discharge step." If both "measuring" and "monitoring" occur "during" periods of time, there is little reason to assume that one term excludes single measurements and one does not.

Fortunately, the written descriptions provide answers that the claim language does not. Each description of the six shock delivery patents discloses an invention whose preferred embodiment has three "aspects." '879 Patent at 2:39-52.[3] The first is a

[3]The '454 Patent and the '927 Patent disclose the three aspects by incorporating the written description of the '879 Patent.

defibrillator that delivers a shock with a biphasic waveform that has predetermined values for the length of its two shock pulses. E.g., '879 Patent at 4:29-53. In this aspect, no "measuring" or "monitoring" takes place. In the second aspect, the initial phase of shock lasts for a minimum predetermined threshold time, but that time is extended if the voltage has not dropped below a threshold voltage at the end of the threshold time. '879 Patent at 5:13-20. In the third aspect, the initial phase of shock ends at a predetermined threshold time or at the time that the voltage drops below a threshold value, whichever comes first. '879 Patent at 5:47-60.

The disclosure of the second and third aspects of the preferred embodiments illuminates the meaning of "monitoring." In the second aspect, there is no need to measure a voltage until the end of the threshold time. If, however, the voltage has dropped below a threshold at the end of the threshold time, the first phase of the shock terminates, and no further measurements are necessary. In the third aspect, the defibrillator necessarily measures voltage at least once before the threshold time, so that it can determine whether to terminate the initial shock phase before the threshold time expires. In either aspect, it is possible for a single measurement to suffice. Indeed, a single measurement will suffice in every instance in which the first measurement reveals a voltage below the threshold level.

The court ultimately adopts "measuring" as the definition of "monitoring" because only this definition allows the patents to cover the invention's preferred embodiment. The court recognizes that it is not necessary that every claim cover the preferred embodiment. In this case, however, unless Philips' construction is correct, four of the six shock delivery patents would contain no claims covering the preferred embodiment. The asserted claims of the '612, '454, and '905 Patents use only the term

"monitoring," and never the term "measuring." If "monitoring" excludes single measurements, then none of the claims would cover the second and third aspects of the preferred embodiment, both of which admit the possibility that a single measurement would suffice. There is a heavy presumption against construing claims to read out a preferred embodiment. Vitronics, 90 F.3d at 1583 (noting that such a construction is "rarely, if ever, correct").

In addition, because each of the possibilities requiring a single measurement corresponds to a patient characteristic, Defibtech's construction would not merely read out the preferred embodiment, it would exclude an entire class of patients from an invention whose purpose is to adjust shock delivery to fit any patient's impedance parameters. In the second aspect of the invention, the single measurement scenario corresponds to a patient with low impedance. '879 Patent at 5:23-26. The single measurement scenario in the third aspect also corresponds to a patient with low impedance. '879 Patent at 5:57-60. The Patents thus teach that only a single measurement in the first phase of the shock waveform is necessary for patients with sufficiently low impedance. The court therefore cannot exclude single measurements from the definition of "monitoring" without implicitly holding that the shock delivery patents exclude low impedance patients. The court thus construes "monitoring" to mean "measuring," and to include single measurements.

3. "Discharging a single capacitor" means "releasing energy from a single capacitor."

Defibtech contends that the phrase "discharging a single capacitor" cannot have its plain meaning ("releasing energy from a single capacitor"), but rather must mean:

> delivering electrical energy from one capacitor to the electrodes and adjusting the shape of the waveform delivered to a patient in response to a patient-dependent electrical parameter measured during delivery of the waveform.

To derive this highly specific definition from the generic claim language, Defibtech turns to the written descriptions, which disclose that the primary advantage of the claimed invention is its ability to deliver a shock that is tailored to the electrical parameters of the patient. Because the capacitor discharge is the step that delivers the shock to the patient, Defibtech contends that the term "discharging a single capacitor" must be limited to the type of discharge that is the primary advantage of the invention.

Defibtech's argument fails for at least two reasons. First, there is no requirement that a patentee limit every claim to the primary feature of his or her invention. See Liebel- Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 908 (Fed. Cir. 2004) (holding that even where all embodiments in specification disclose a particular limitation, it is error to limit claims unless specification contains a "clear disavowal" of other embodiments); see also Phillips, 415 F.3d at 1327. Second, even if Defibtech correctly describes tailored shock delivery to the patient as the purpose of the invention, the invention has other purposes as well. It discloses, for example, that the invention can use discharged current to detect improperly placed electrode leads without shocking a patient. '927 Patent at 7:53-57.

Lastly, the doctrine of claim differentiation compels the court to accept Philips' construction. Under this doctrine, the court must construe an independent claim to avoid nullifying claims that depend from it, unless there is compelling evidence for a nullifying construction. Liebel-Flarsheim, 358 F.3d at 910 ("[T]he presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim."). "Discharging a single capacitor" appears only in independent Claim 8 of the '927 Patent. Claim 9 depends from it, and contains "monitoring" and "adjusting" limitations. If "discharging a single capacitor" has the

meaning that Defibtech urges, then the additional limitations in Claim 9 are surplusage. The limitations in Claim 9 reveal suggest that Claim 8 has broad scope. Nothing in the remainder of the specification disavows that scope. The court thus construes "discharging a single capacitor" to mean "releasing energy from a single capacitor."

B. Construing Terms in the Self-Test Patents

Two of the three self-test patents, the '460 Patent and the '374 Patent, share a common written description. The '059 Patent issued from a separate application.

1. In Some Claims, a "Test Signal" Is a Signal that Initiates a Test in the Defibrillator, Whereas In Other Claims It May Also Be A Signal Used to Perform Testing.

Philips contends that a "test signal" is a signal "associated with testing," including signals that initiate tests and those that perform tests. Defibtech seeks to limit the term to signals that initiate tests. As the court explains below, Philips' construction of the term is correct, but the limitation that Defibtech seeks to impose exists in many of the "test signal" claims.[4]

Before explaining its construction, the court must specify which instances of "test signal" it is construing. The '374 Patent and the '460 Patent claim a "test signal" in a variety of contexts. The term sometimes appears in the phrase "test signal generator" ('374 Patent Claims 1, 2, 6, 21, 22, 41), and sometimes stands on its own in a set of claims that the court will refer to as "bare" test signal claims. '374 Patent Claims 25, 26, 42, 44, 65, 67-69; '460 Patent Claims 1, 3, 4.[5] In response to the court's order to choose

[4]For the term "test signal" (and for the parties' later dispute over the phrase "prior to any attempted use") the important issue is not precisely what the term means, but whether the claim in which it appears limits the term in the fashion one party proposes.

[5]Several other patent claims use the term "test signal" (e.g. '374 Patent Claims 45-50), but the parties have not asked the court to consider them. The court assumes that Philips has not asserted these claims in this action.

ten claims for this first round of construction, the parties asserted the bare "test signal" claims but not the "test signal generator" claims. There is no reason to construe these terms separately, however, because the analysis underlying the claims is identical, and because the court must assume, "unless otherwise compelled," that the same claim term used in the same patent "carries the same construed meaning." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1334 (Fed. Cir. 2003).

The specification discloses a preferred embodiment that consists of, *inter alia*, two components. The first is a "system monitor" that sends signals to a test controller to initiate tests, and the second is a controller or CPU that works in conjunction with other components to actually perform the tests.[6] E.g., '374 Patent at 4:60-6:19 (describing "system monitor"), 3:35-38, 6:19-13:48 (describing "controller" or "CPU"). Unfortunately, the specification's terminology regarding the signals that each component generates is inconsistent. The written description of the system monitor sometimes refers to the signals it sends to the CPU as "test signals" (e.g., '374 Patent at 4:60-67), but at other times refers to "test initiation signals" it sends to the CPU. E.g., '374 Patent at 3:51-53, 5:21-33, 6:18-20. In all such references, however, the description leaves no doubt that the signal *that the system monitor generates* initiates other self-tests and does not perform them.

The written description of the signals that the CPU uses to perform tests is similarly inconsistent. In one instance, a signal that the CPU indirectly uses in conducting tests is called a "test signal," (e.g., '374 Patent at 8:56-9:3 (describing a "test signal injector" to verify the function of various elements)), but in all other instances, the

[6]The specification also notes the possibility that the system monitor and controller could be combined in the same component. '374 Patent at 3:27-29.

test signal has a more specific name that corresponds to a particular self-test. E.g., '374 Patent at 8:52 ("artifact test signal"), 9:10 ("test current signal").

Despite these inconsistent uses of "test signal," the claim language and the written description combined reveal that several claims contain limits on the "test signal." In the bare "test signal" claims, all but two of the claims expressly disclose one or more self-tests performed "in response" to the test signal or other stimuli. '374 Patent Claims 42, 44, 65, 67-69; '460 Patent Claims 1, 3, 4. In these claims, therefore, the test signal is a signal that initiates a test, not one that performs it. In the remaining two bare "test signal" claims, the "test signal" is one that the "system monitor" generates, and is thus also a signal for initiating a self-test. '374 Patent Claims 25, 26.

In all but one of the "test signal generator" claims, however, the claim language does not compel the court to limit the test signal to one that initiates testing. Claim 1 of the '374 Patent, for example, discloses a "test signal generator" and a "means for operating [it] prior to any attempted use of the defibrillator." The claim language suggests that the "test signal generator" is the generator that sends signals used in testing, and the "means for operating [it]" is another generator that sends signals to initiate the claimed "test signal generator." The written description supports this interpretation, as it discloses a "signal generator" used to perform "ECG front end tests" and a test signal generator that is different from the "system monitor" that generates initiating test signals. '374 Patent at 8:19-55. It similarly reveals that other "test signal generator" claims depending from Claim 1 use the term to refer to a generator that performs various self-tests. '374 Patent Claim 2 (adding a "functionality tester" to the test signal generator), Claim 6 (adding a "calibration verifier"), Claim 21 (adding a "battery condition tester"). Claim 41 is identical to Claim 1 except that it discloses a

"periodic" test signal generator, and thus it also uses "test signal" in the broad sense that Philips advocates. In Claim 22, however, the "test signal generator" is limited to the "system monitor" that the court has already discussed. Thus, the "test signal generator" of Claim 22 generates only signals used to initiate testing.

To summarize, a "test signal" is a "signal associated with testing." In several of the asserted claims, however, additional claim language limits the term to a "signal that initiates testing." Those claims are all of the asserted bare "test signal" claims, as well as Claim 22 of the '374 Patent.

2. "Through conductors" means "through any electrically conductive material."

The phrase "through conductors" appears only in Claim 1 of the '059 Patent. The claim covers a defibrillator maintenance method including a step that "periodically deliver[s] a test pulse in a defibrillator from an energy source through conductors to a patient simulator . . . ." Philips urges the court to construe "through conductors" to mean "through any electrically conductive material." Defibtech insists that the "conductors" in the phrase are limited solely to the "patient electrode leads," which are the wires connecting the defibrillator to the electrodes used to shock a patient.

The claim language establishes that the claimed conductors are a pathway between an "energy source" and a "patient simulator." There is no express or implicit requirement that the conductors lead to defibrillator electrodes. Indeed, no claim of the '059 Patent mentions "electrodes." The written description, on the other hand, frequently discloses "conductors" between the electrodes and other components. E.g., '059 Patent at 3:27 ("Conductors leading from at least two electrodes"), 3:53-54 (same), 4:9-10 (same). The written description also admits that the invention applies only to medical instruments that use electrodes. '059 Patent at 9:2-6.

Nothing in the remainder of the specification, however, requires that the electrodes and the patient electrode leads be part of the pathway between the energy source and the patient simulator. Several disclosures indicate otherwise. The schematic diagrams illustrating the invention ('059 Patent Figs. 1, 2) demonstrate connections between the patient simulator and various energy sources that do not pass through the patient electrode leads. The written description discloses that "[o]ther suitable tests" will be apparent to persons of skill in the art ('059 Patent at 3:42-43), and these may be tests that do not require the patient electrode leads. In addition to testing for various electrode related problems, the invention is capable of diagnosing problems with the "defibrillator circuit itself," a test that would not necessarily involve the electrodes. '059 Patent at 4:30-38. Because the written description shows conductive pathways that do not include the electrodes, and because there is no "clear disavowal" of conductors between the energy source and the patient simulator other than the patient electrode leads, the court declines to limit Claim 1. Liebel-Flarsheim, 358 F.3d at 908. Accordingly, "through conductors" means "through any electrically conductive material."

3. "Prior to any attempted use of the defibrillator" means "prior to any attempted use of the defibrillator to treat a patient, and possibly other uses as well."

The '374 Patent contains several claims covering defibrillator self-test technology with aspects that operate "prior to any attempted use of the defibrillator." '374 Patent Claims 1, 41, 42, 44, 67. Philips relies on the open-ended claim language (i.e., "any attempted use") and contends that the court should construe "use" broadly to encompass non-therapeutic uses including simply turning the defibrillator on or using the defibrillator to perform a manual self-test. Defibtech asserts that "use" is limited to using the defibrillator to treat a patient.

It makes little difference what the phrase "prior to any attempted use" means, because the claims in which it appears impose modifications that resolve the parties' disputes. See supra n.4. Claim 1 covers a defibrillator with "means for" operating a "test signal generator" and a "defibrillator status indicator" "prior to any attempted use." The other four claims, however, contain important qualifying language. Claim 41 is identical to Claim 1 except that, critically, the claimed test signal generator is "periodic." Claims 42 and 44 are method claims for "automatically determining and indicating" a defibrillator status "prior to any attempted use." Claim 42 requires a test signal generated "automatically and periodically," whereas Claim 44 requires a test signal generated "automatically in response to a predetermined event or condition." Claim 67 is unique in that its method requires "automatic[] and periodic[]" test signal generation "without human intervention" "prior to any attempted use," but does not require that the indication of defibrillator status occur prior to use. These explicit qualifications, when read in light of the remainder of the specification, alter the scope of the phrase "prior to any attempted use."

The '374 Patent discloses numerous self-tests that precede various uses of the defibrillator. It teaches several sets of periodic tests that would occur even if a user never touched a defibrillator incorporating the patented technology. '374 Patent at 6:44-58 (disclosing weekly periodic self-tests, monthly periodic self-tests, as well as daily periodic self-tests). When a user inserts a battery, the defibrillator can perform another series of self-tests. '374 Patent at 6:35-43. Another possible self-test assesses the defibrillator at the moment a user turns it on. '374 Patent at 6:59-65. A set of "runtime" self-tests monitors the defibrillator "continually" after a user turns it on. '374 Patent at 6:66-7:2.

With these examples of self-tests in mind, the court turns to Claim 1 and its requirement of a means for status indication "prior to any attempted use of the defibrillator." If the patented technology required the use of *all* of the above self-tests, Philips' open-ended construction of the term would be correct, as the defibrillator would have means for performing at least one self-test in advance of any use. The Claim, however, does not require all of these self-tests; it requires only one. Moreover, the Claim does not explain which test the defibrillator has means to perform.

A defibrillator with means for performing a single self-test would be capable of indicating a status before all therapeutic uses, but not necessarily before other uses. Because a defibrillator that has means to perform only one test would satisfy Claim 1, it would not necessarily provide means to indicate status before non-therapeutic uses. For example, although turning the defibrillator on is a "use," a defibrillator that had means for conducting only "runtime" tests would not reveal its status before that use. The same is true of a defibrillator with means to conduct only a manual self-test: it could not indicate a status in advance of the manual self-test, which is itself a "use."

Ultimately, the only "uses" of the defibrillator for which the invention of Claim 1 would *invariably* have means to provide an indication of pre-use status are uses in treating a patient. For any defibrillator with means to perform a randomly selected self-test, the defibrillator could indicate status before anyone used it to treat a patient, but not necessarily before other uses. Thus, in Claim 1, the phrase "prior to any attempted use" carries a meaning more consistent with Defibtech's proposed construction. The phrase means "prior to any attempted use of the defibrillator to treat a patient, and possibly before other uses as well."

The other claims, however, limit the "prior to any attempted use" phrase. Claims 41 and 42 introduce an additional limitation – the test signals that initiate the self-tests must be "periodic" or must be generated "periodically." The parties have not asked the court to construe "periodically," but in the '374 Patent it means "on an internal, pre-set schedule." The specification teaches that "periodic" tests are different than tests conducted "in response to predetermined conditions or events." '374 Patent at 2:10-13. Thus, when Claims 41 and 42 require "periodic" test initiation signals, they require at least one periodic self-test. As noted above, the patent teaches that these are tests that occur daily or weekly or monthly, whether the defibrillator is turned on or not. By their nature, these tests occur before any use of the defibrillator, including merely turning the device on. Thus, in Claims 41 and 42, the scope of the phrase "prior to any attempted use" is "prior to any attempted use of the defibrillator, even non-therapeutic uses."

Claim 67 not only requires the "periodic" generation of a test signal, it requires that the generation occur "without human intervention." Thus, like Claims 41 and 42, Claim 67 requires at least one of the periodic self-tests, and thus requires status indication "prior to any attempted use of the defibrillator, even non-therapeutic uses."

The method of Claim 44 does not require a "periodic" test signal, but rather requires one generated "automatically in response to a predetermined event or condition." This method requires at least one self-test, but it excludes the periodic self-tests. If the test was a "runtime" self-test, the method of this Claim would be (like the defibrillator of Claim 1) incapable of indicating status before the defibrillator is turned on. In this Claim, therefore, "prior to any attempted use" carries the same meaning as in Claim 1 – "prior to any attempted use of the defibrillator to treat a patient, and possibly before other uses as well."

The prosecution history of the '374 Patent does not alter the court's construction. In overcoming the PTO's objection that the prior art Eikefjord Patent (United States Patent No. 5,097,830) anticipated the invention, Philips argued that its claims required operating the self-test system "*prior* to any attempted use of the defibrillator," whereas the Eikefjord Patent disclosed testing that occurred "*during*" use of the defibrillator. J.A. 00463-64 (emphasis in original). The "use" described in the Eikefjord Patent, however, is use or attempted therapeutic use of the defibrillator on a patient. The Eikefjord Patent does not disclose self-testing that occurs prior to therapeutic uses. The prosecution history merely shows that Philips' claims require a means of indicating status prior to therapeutic use. This is consistent with the court's construction.

4. "Indicating an operating status of a defibrillator" means "providing a visible or audible alert of whether the defibrillator is capable of treating a patient and possibly other indications of operational status."

Three substantially identical claims of the '374 Patent require the invention to "indicat[e] *an* operational status of an external defibrillator" by "indicating *the* operational status of the defibrillator . . . ." '374 Patent Claims 42, 44, 67 (emphasis added). Because the claims use the article "an" before "operational status," they suggest that the defibrillator need only indicate one of many possible operational statuses. See Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 977 (Fed. Cir. 1999). Defibtech contends that the indication of operational status is limited to "information about whether the defibrillator can be used to treat a patient." Philips' preferred construction is not clear to the court. Philips may be asserting that any indication of information on the operational status of the defibrillator would satisfy the claims, or it may contend that although the claims require an indication of whether the defibrillator can be used to treat a patient, the defibrillator may reveal additional operational statuses as well. The court adopts the latter construction.

The claim language supports a more expansive interpretation of "operational status" than Defibtech's construction, as does the written description. The inventors noted that a defibrillator should "indicat[e] not only . . . whether it will operate at all, but also verify that the defibrillator meets its established specifications." '374 Patent at 1:63-65. Thus, the invention suggests that the defibrillator must indicate whether it will operate, and may also indicate other operational statuses. Later, the patent discloses that those operating statuses are not limited to those that would indicate when the defibrillator is capable of treating a patient. The failure of any of numerous self-tests requires "an indication of an inoperable status *or* error status . . . ." '374 Patent at 7:8-9 (emphasis added). One suggested test is the "Stuck Button self-test" that verifies whether any of the defibrillator buttons are stuck in a closed position. '374 Patent at 13:49-53. Although a stuck button would result in a "Not OK" indicator display, id., this would not necessarily mean that the defibrillator is incapable of treating a patient. As to other self-tests, while many of them check defibrillator functionality, some also assess calibration. E.g., '374 Patent at 9:2, 9:25. It is thus possible for a self-test to indicate that the defibrillator is functional but not properly calibrated. See '374 Patent at 2:3-7 (noting importance of defibrillator calibration). Moreover, the inventors envisioned a status indicator that would allow the defibrillator to display these more complex assessments of operational status. '374 Patent at 5:41-6:10 (describing an indicator with a "separately addressable portion" indicating power and functionality in addition to a "fail-safe 'OK' symbol").

While the invention is not limited to displaying whether it is capable of treating a patient, it must at least provide such an indication. A defibrillator that did not display this information would not serve the purpose of the invention. Philips admits as much in stating that the "patent expressly teaches the need for a defibrillator to provide an

operator with an indication of (1) whether it will operate *and* (2) whether the defibrillator meets its established specifications." Philips' Opening Br. at 19 (citing '364 Patent at 1:56-64) (emphasis added). Thus, the court construes these claims to require "providing a visible or audible alert of whether the defibrillator is capable of treating a patient and possibly other indications of operational status."

5. "Indication of the condition of the defibrillator" does not require indication of the status of the electrodes.

Similar to the '374 Patent claims described in the previous subsection, two claims of the '059 Patent require that the invention "provid[e] an indication of the condition of the defibrillator" (Claim 1), and "determine a condition of the defibrillator" (Claim 9). The parties raise two disputes. The first is a reprise of their dispute over "operational status" in the '374 Patent. Defibtech argues that the indicated "condition" is limited to whether the defibrillator is operable. The second dispute is whether, as Defibtech argues, the operability of the defibrillator electrodes is a condition that the defibrillator must indicate.

The court resolves the first dispute in the same manner it resolved the similar dispute over the "operational status" indication in the '374 Patent. The indication of "condition" must at least include whether the defibrillator can be used to treat a patient, but is not limited to this indication. Like the '374 Patent, the '059 Patent claims require "an" indication of condition (Claim 1) or "a condition" (Claim 9), and thus suggest that more than one condition or indication is possible. Although the '374 Patent and '059 Patent do not have a common written description, the '059 Patent similarly discloses statuses other than a binary operable/inoperable status. Compare '059 Patent at 3:47, 3:50, 4:3, 4:29, 4:43-44 (describing operable/inoperable indication) with '059 Patent at 5:39-40 (describing a "fault indicator" without requiring operable/inoperable indication),

5:62-64 (same), 6:65-67 (describing a test result indicator without requiring operable/inoperable indication), 8:33-35 (same). Thus, the defibrillator must at least indicate whether the defibrillator is operable, but may disclose other "conditions" as well.

As to the second dispute, the written description does not support a requirement that the "condition" include the condition of the defibrillator electrodes. Defibtech correctly notes that the '059 Patent focuses on testing the condition of the electrodes rather than other portions of the defibrillator. E.g., '059 Patent at 1:8-9 ("This invention relates generally to a method and apparatus for testing medical electrode systems"); 1:56-59 ("What is needed, therefore, is a defibrillator system providing an indication of the condition of the defibrillator and defibrillator electrodes"). The claims, however, never use the term "electrode." The parties' dispute is much like their dispute over the meaning of "through conductors" in the same patent. See supra Part III.B.2. As in that dispute, the court must reject Defibtech's limiting construction.

The court cannot accept Defibtech's construction because the '059 Patent expressly describes how its indicator can disclose the condition of non-electrode components of the defibrillator system. The '059 Patent discloses tests of conditions arising in components other than the electrodes. It teaches that an "inoperable" indication "could mean that there is a problem with the electrodes, the conductive gel on the electrodes, the electrode interface, and/or the defibrillator circuit itself." '059 Patent at 4:32-34. The indicator can thus disclose information about the defibrillator separate from the electrodes. If a user receives an inoperable indication, she can "replace the electrodes . . . and run the test again," and she will know from the result of the second test whether the problem was in the electrodes or in the remainder of the defibrillator

system. '059 Patent at 4:35-39. The written description thus does not require the indication of electrode "condition," and the court therefore construes these claims in accordance with their broad language. "Indication of the condition of the defibrillator" means "indication of whether the defibrillator is capable of treating a patient, and possibly other defibrillator statuses."

6. The Parties Agree Substantially on the Construction of the Remaining Two Self-Test Terms.

At oral argument, the parties announced that they had reached agreement on the meaning of the terms "automatic" and "automatically" in the self-test patents. They stipulated that the term means "performed by the device itself either periodically in response to the passage of time or in response to a specified event or condition." The court finds this construction supported by the claims and the rest of the specification, and thus adopts it. The court notes that in most claims, the term "automatically" precedes qualifying language that limits the term. E.g., '059 Patent Claim 1 ("automatically without external activation"), '460 Patent Claims 5-7 ("automatic self-tests within the external defibrillator on a . . . periodic schedule"), '374 Patent Claim 67 ("automatically and periodically"), Claim 68 ("automatically on a predetermined schedule"), '460 Patent Claim 3 ("automatically upon a predetermined event or condition"); '374 Patent Claim 44 (same), Claim 65 (same); Claim 69 (same). The court notes that its construction of "periodically" in supra Part III.B.3 changes the import of "automatically" in several claims, and that the phrase "predetermined event or condition" does so as well.

Both in their briefing and at oral argument, the parties were unable to identify a genuine dispute over the meaning of "communication channel" in claims of the '374 Patent. The court adopts the following construction: "a direct or indirect connection between two components for transmitting control signals and/or other information."

This construction is consistent with the parties' proposed constructions, as well as the use of the term in the '374 Patent.

IV. CONCLUSION

The court's construction of the above terms is merely the first round in the claim construction process. The parties have briefed an additional 28 claim terms for construction. To expedite the construction of those claims, the court directs the parties to meet and confer within one week of receiving this order. They shall determine if this order obviates the need to construe some of the remaining claim terms. Within seven judicial days of this order, the parties shall file a joint statement that (1) indicates whether they have resolved their disputes over any of the remaining claims, (2) divides the remaining terms into one or more groups of ten terms or less for further construction, (3) states which group the parties would prefer the court to construe first, and (4) states the parties' preferences for conducting additional hearings on the remaining claim terms. The court's intention is to complete the claim construction process no later than early December, and to require the parties to submit any dispositive motions within 30 days thereafter. The court has yet to identify a new trial date for this action, but advises the parties that trial will begin no later than April 2006.

Dated this 25th day of October, 2005.

s/James L. Robart

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JAMES L. ROBART
United States District Judge